RUBICON LLC, AI 1468
DRAFT NOTIFICATION OF INTENT TO COMPLY
HAZARDOUS WASTE COMBUSTORS MACT REGULATIONS

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AI 1468

1.0 General Information

1.1 The Name and Address of the Owner/Operator

Rubicon LLC
9156 Highway 75
Geismar, LA 70734

1.2 Source Designation

Rubicon LLC is a major source.

1.3 Source Description

Rubicon manufactures Aniline and Diphenylamine (DPA). Nitrobenzene and Hydrogen are reacted in the presence of a catalyst to produce Aniline. DPA is produced from the catalytic reduction of Aniline. There are three units subject to 40 CFR 63 Subpart EEE. These are the DPA 1 Superheater, the DPA 2 Superheater and the Aniline 2 Boiler. The units are all in the Hazardous Waste Burning Liquid Fuel-Fired Boiler category.

The DPA 1 Superheater has a forced draft fan that feeds air to the combustion chamber. Liquid hazardous waste generated in the DPA production units and natural gas are combusted using a three burner system. The combustion gases flow out of the combustion chamber into a convection section that is used to superheat Aniline and to generate steam. The combustion gases then exit to the atmosphere via a seventy-five foot high stack.

The DPA 2 Superheater has a forced draft fan that feeds air to the combustion chamber. Liquid hazardous waste generated in the DPA production units and natural gas are combusted using a single burner. The combustion gases flow out of the combustion chamber into a convection section that is used to superheat Aniline and to generate steam. The combustion gases then exit to the atmosphere via a seventy-five foot high stack.

The Aniline 2 Boiler has a forced draft fan that feeds air to the combustion chamber. Three liquid hazardous waste streams generated in the Aniline production units and natural gas are combusted using a single burner. The combustion gases flow out of the combustion chamber into a boiler section that is used to generate steam. The combustion gases are then pulled into three baghouses operated in parallel using an induced draft fan located after the baghouses. The combustion gases then exit to the atmosphere via a one hundred and fifteen foot high stack.

These units currently operate under Hazardous Waste Interim Status. Since 1991, these units have been regulated under 40 CFR 266 Subpart H Boiler and Industrial Furnace

Regulations (BIF). Hydrochloric Acid (HCl), Chlorine, Mercury, Chromium, Cadmium, Lead, Particulate Matter (PM), and Carbon Monoxide (CO) are regulated under the BIF regulations as well as under 40 CFR 63 Subpart EEE. Since 1992, these three units have been tested on five different occasions to demonstrate compliance with the BIF regulations. A trial burn and risk assessment trial burn were performed in 1997 on these three units in order to receive a hazardous waste permit.

2.0 HWC MACT Compliance Description

2.1 Waste Minimization and Emission Control Technique(s) Being Considered

Rubicon does not anticipate using additional waste minimization on the hazardous waste streams burned in the DPA 1 Superheater, the DPA 2 Superheater, or the Aniline 2 Boiler in order to comply with the emission standards of 40 CFR 63 Subpart EEE. The Diphenylamine and the Aniline Production processes do not use any Chlorine containing compounds, Mercury, Chromium, Cadmium or Lead in the direct manufacturing of Diphenylamine or Aniline. The hazardous waste streams in the DPA 1 and DPA 2 Superheaters contain near non-detectable levels of ash and do not require any further waste minimization to meet the Particulate Matter emission standard. The test results for PM from the 2005 BIF Recertification Test for the DPA 1 Superheater and the DPA 2 Superheater were 5.5 mg/dscm and 5.7 mg/dscm corrected to 7% excess Oxygen, respectively. The PM emission standard under 40 CFR 63 Subpart EEE is 80 mg/dscm corrected to 7% excess Oxygen.

Although waste minimization is not expected to be required for compliance with 40 CFR Subpart EEE, Rubicon has an ongoing waste minimization program as required by being a large quantity Hazardous Waste Generator. In December 2005, Rubicon was accepted into the EPA's National Partnership for Environmental Priorities Program (NPEP). The proposed project involves improvement of the Aniline purge still to recover the Benzene fraction of the waste. It is estimated that approximately 800,000 pounds of benzene could possibly be refined and reused as feedstock to the Nitrobenzene process. Rubicon has also been awarded the Louisiana Governor's Environmental Leadership Awards for pollution prevention achievements in 1998, 1999, 2000 and 2002.

Over the last five years, numerous projects have been implemented to reduce the hazardous waste tar generation in both the DPA 1 and DPA 2 production units. In 2005, the DPA 1 Converter Improvement Project consisted of modifications to the support, mixing apparatus and dense packing the catalyst that will yield less impurities hence less DPA tar formation. There was a 30% decrease in process waste (lb/1000 lb product produced) comparing 2005 to the average of the prior three years (2002 to 2004). The capital investment for this project was approximately $921,000. Other projects implemented over this period include: Improvements to the Converters of the DPA Process, Automation of the Aniline Recovery Still, DPA 1 Superheater Control Improvements, Replacement of the DPA 1 Aniline Stripper Purge Valves, Replacement of the DPA 2 Aniline Stripper Purge Valves, Shutdown of the TDI Process unit, DPA 1 Superheater Control Improvements,

and DPA 2 Superheater Control Improvements. All of these projects have lead to lower waste generation and subsequently less waste being burned in the DPA 1 and DPA 2 Superheaters.

Over the past five years, numerous projects have been initiated and completed in the Aniline II Unit to increase Aniline yield and decrease the amount of associated process waste. In 2005, the controls on both Aniline Reactors were upgraded at a capital cost of $404,300. Other projects over this time period include: Reactor B Control Upgrade, Improvements to the Feed Distribution to Reactor B, Temperature Compensated Nitrobenzene Flow to the Aniline Reactors, Modifications to the Aniline 2 Reactors, Aniline 2 Purge Still Sequencing Improvements, and Installation of the Pilot Reactor in Aniline 3. From 2000 to 2005, the ratio of process waste (lb/1000 lb product produced) decreased by 15%. From 2004 to 2005, there was a 5 % decrease in process waste (lb /1000 lb product produced).

The DPA 1 and DPA 2 Superheaters currently do not have any emission controls and Rubicon does not anticipate having to install emission controls to comply with the emission standards of 40 CFR 63 Subpart EEE.

The Aniline 2 Boiler combusts a waste stream that contains a spent solid nickel catalyst. The Aniline 2 Boiler is equipped with three baghouses that are operated in parallel to control Particulate Matter emissions. The test result from the 2005 BIF Recertification Test for the Aniline 2 Boiler demonstrated that PM emissions are already below the emission standard. The average result of the test was 7.6 mg/dscm of PM corrected to 7% excess Oxygen. Rubicon does not anticipate any further PM emission controls for the Aniline 2 Boiler.

Dioxin and Furans emission testing from the 1997 Trial burn for the Aniline 2 Boiler indicated that the Dioxin and Furans emissions were approximately four times the Dioxin and Furans emission standard of 40 CFR 63 Subpart EEE. A process change was made in 1998 to remove a non-hazardous process vent that contained transient levels of chlorinated organic compounds from the Aniline 2 Boiler. Subsequent testing has indicated that the levels of Dioxin and Furans are under the emission standard of 40 CFR 63 Subpart EEE. Rubicon does not anticipate any further Dioxin and Furans emission controls for the Aniline 2 Boiler.

40 CFR 63 Subpart EEE requires that, during the performance test, that each combustion unit demonstrate Total Hydrocarbon (THC) emissions of less than 10 ppm on an hourly rolling average basis and CO emissions of less than 100 ppm on an hourly rolling average basis. 40 CFR 63 Subpart EEE requires that the unit continuously monitor either THC or CO. These limits are used to control organic hazardous air pollutants. Rubicon currently monitors CO emissions continuously on the DPA 1 Superheater, the DPA 2 Superheater and the Aniline 2 Boiler and is in compliance with the 100 ppm CO limit. Rubicon is currently evaluating the three units for compliance with the THC limit. If necessary, any projects to comply with the THC limit will likely consist of combustion burner upgrades.

2.1 Emission Monitoring Technique(s) Being Considered

40 CFR 63 Subpart EEE requires that the unit continuously monitor either THC or CO. Rubicon currently monitors CO continuously on the DPA 1 Superheater, the DPA 2 Superheater and the Aniline 2 Boiler using a gas filter correlation type infrared instrument. 40 CFR 63 Subpart EEE also required that each unit continuously monitor Oxygen (O_2). Rubicon currently monitors O_2 continuously on the DPA 1 Superheater, the DPA 2 Superheater and the Aniline 2 Boiler using an analyzer that measures paramagnetic susceptibility of the gas stream by means of a magnetodynamic-type measuring cell.

40 CFR 63 Subpart EEE requires that units with baghouses continuously monitor PM using either broken bag detectors or a PM Continuous Emission Systems. Rubicon will likely install broken bag detectors. The detectors will be either a triboelectric detector or an insitu detector. The Triboelectric detector counts the particles that strike an electrified metal rod. The insitu monitor counts the particles that pass through two opposing light sources.

2.2 Waste Minimization and Emission Control Technique(s) Effectiveness

The baghouses installed on the Aniline 2 Boiler have demonstrated greater than 99% effectiveness. Waste minimization techniques are not expected to be necessary for compliance with the Hazardous Waste Combustors MACT.

2.3 Evaluation Criteria Used to Select Waste Minimization and/or Emission Control Technique(s)

Three main criteria will be used to evaluate waste minimization and/or emission control techniques necessary to comply with this rule:

1. Ability to meet the emission standards: Waste minimization and/or emission control techniques will be judged on their ability to meet the emission standards. They will also be judged on the percentage of time that they meet the emission standard.

2. Operating Reliability: Waste minimization and/or emission control techniques will be judged on their operating reliability. Some examples are length of time the equipment runs before needing repair and the amount of maintenance required to maintain the equipment for proper operation.

3. Economics: The cost effectiveness of the solution will be used in conjunction with the ability to meet the emission standards and operating reliability in choosing between two projects with similar capabilities. If only one solution exists for a particular unit, then that solution will be evaluated against closing the unit as a hazardous waste combustion unit.

2.4 Rubicon Compliance Strategy With the Emission Standards

The DPA 1 and DPA 2 Superheaters do not contain Mercury, Chromium, Cadmium, Lead or Chlorine containing compounds in the hazardous waste feed streams because the production processes do not utilize these compounds and the ash content in these waste feed streams is nearly non-detectible. Rubicon plans on limiting the levels of Mercury, Chromium, Cadmium, and Lead in the hazardous waste feed streams for the DPA 1 and the DPA 2 Superheaters to levels below emission standards. Rubicon plans on limiting the levels of chloride in hazardous waste feed streams for the DPA 1 and the DPA 2 Superheaters to levels below emission standards for Hydrochloric Acid and Chlorine. Rubicon will not combust chlorinated compounds in the DPA 1 and the DPA 2 Superheaters in order to operate below the emission standards for Dioxin and Furans. Rubicon plans on limiting the levels of ash in hazardous waste feed streams for the DPA 1 and the DPA 2 Superheaters to levels below emission standards for PM.

The Aniline 2 Boiler does not contain Mercury, Chromium, Cadmium, Lead or Chlorine containing compounds in the hazardous waste feed streams because the production processes do not utilize these compounds. Rubicon plans on limiting the levels of Mercury, Chromium, Cadmium, and Lead in the hazardous waste feed streams for the Aniline 2 Boiler to levels below emission standards for Mercury, Chromium, Cadmium, and Lead. Rubicon plans on limiting the levels of chloride in hazardous waste feed streams for the Aniline 2 Boiler to levels below emission standards for Hydrochloric Acid and Chlorine. Rubicon will not combust any chlorinated compounds in the Aniline 2 Boiler in order to operate below the emission standards for Dioxin and Furans. Rubicon plans on using the three baghouses operated in parallel that have an efficiency greater than 99% to comply with the emission standards for Particulate Matter.

Rubicon may choose to utilize the health based compliance alternatives for total Chlorine in lieu of the HCl and Chlorine emission standard for the DPA 1 Superheater, the DPA 2 Superheater and the Aniline 2 Boiler. Rubicon may also choose to utilize the alternative metal emissions control requirements in lieu of the PM emissions standard for the DPA 1 and the DPA 2 Superheaters.

3.0 Key Compliance Dates

Provided below is an anticipated compliance schedule for the DPA 1 Superheater, the DPA 2 Superheater and Aniline 2 Boiler. All three units will follow the schedule simultaneously.

ACTIVITY	ANTICIPATED DATE[1]
Begin initial engineering evaluation to define system upgrades	August , 2006
Complete initial engineering evaluation of system upgrades (if necessary)	October, 2006
Complete engineering design of system upgrades (if necessary)	June, 2007
Complete detailed design/ Issue purchase orders for upgrade ((if necessary)	December, 2007
Provide Project Details to the Regulatory Agencies (if necessary) (*)	January, 2008
Submit Comprehensive Performance Test Plan	April, 2008
Initiate installation of process changes (if necessary)	May, 2008
Complete installation of process changes (if necessary)	August, 2008
Conduct Comprehensive Performance Test	April, 2009
Achieve final compliance / Submit Notification of Compliance	August, 2009

(*) The three units at Rubicon operate under Hazardous Waste Interim Status. A Title V permit modification is not expected to be required for these projects.

(1) The anticipated dates provided here are not enforceable deadlines, but are provided here to inform the public of the general activities involved in coming into compliance with the new HWC MACT rule.